SOVIET JOURNAL OF COMMUNICATIONS TECHNOLOGY & ELECTRONICS

CONTENTS 1987

Number 1

	English Page	Russian Page
N.Z. Shvarts and V.G. Yelenskiy: Physical Aspects of Microwave Field-Effect Transistors (Review)	1	1681
K.A. Barsukov and E.A. Gevorkyan: Electromagnetic Waves in a Waveguide with a Nonstationary Dielectric Plate	27	1733
A.V. Pomyalov and A.S. Andreyev: Waves of Coupled Oscillations in a Periodic System of Thin-Film Ferrite Resonators	32	1739
V.M. Katikov: Analysis of Search-Tracking Measuring Systems for Multistep Search and Control Procedures	42	1749
V.P. Levshin and A.I. Simonov: Modification of the Polynomial Method of Calculating the Convolution of Signals	49	1757
Bessalov, A.V.: Interference Immunity of a Digital Demodulator of Complex Signals When the Thresholds of Binary Quantizers are Shifted	57	1765
Yu.I. Abramovich and A.I. Nevrev: Methods of Adaptive Adjustment of Compensation Systems under Conditions When the Coordinates of Interference Sources Drift in Angle in Unison	66	1774
A.A. Makovetskiy: The Operating Efficiency of a Laser with Intracavity Pumping Conversion	74	1823
Yu.V. Gulyayev, G.D. Mansfel'd and S.V. Boritko: Acoustoelectronic Interaction in a Semiconductor with Periodically Arranged Contacts in a Varying Electric Field	83	1832
A.Ch. Belyachits, P.D. Kukharchik and V.G. Semenchik: A Holographic System with a Receiver Aperture in the Form of a Circle	90	1839
T.T. Mnatsakanov, I.L. Rostovtsev and N.I. Filatov: Use of a Computer Simulation to Investigate the Influence of Nonlinear Physical Effects on the Current-Voltage Characteristic of Silicon Multilayer Structures	99	1848
N.A. Azarenkov, G.I. Zaginaylov and A.N. Kondratenko: Diffraction and Excitation of Surface Waves Propagating at a Plasma-Metal Boundary	105	1889
V.D. Gusev and V.Ye. Kunitsyn: Reconstruction of the Structure of Volume Inhomogeneities of a Medium	110	1894
A.I. Kon and V.I. Tatarskiy: The Power of a Signal under Conditions of Radioacoustic Sounding of the Atmosphere	118	1903
M.V. Kononov, S.V. Koshevaya and M.Yu. Omel'yanenko: An Electromagnetic Shock Wave in a Rectangular Waveguide with a Nondispersive Cubically Nonlinear Dielectric	123	1909
V.N. Rodionova and G.Ya. Slepyan: The Q Factor of a Cylindrical Cavity with a Coaxial Protrusion	129	1915
BRIEF COMMUNICATIONS		
Kh.L. Garb, R.S. Meyerova, G.V. Pochikayev and P.Sh. Fridberg: Dipole Approximation in the Theory of Diffraction by Small Openings in the Presence of Closely Spaced Parallel Screens	137	1651
Š.Š. Štaras: Effect of Mounting Elements on the Properties of Meander Deflection Systems	139	1653
A.P. Gorbachev, A.N. Romanov and I.A. Romanov: Strip-Line Directional Filters and Multiplexers Coupled to a Resonator Loop	141	1655
V.A. Serikov: Faster Method of Calculating the Two-Dimensional Cross Correlation Function	144	1658
Yu.A. Bryukhanov: Reducing the Duration of Transient Processes in an L-Stage Resonant Amplifier	146	1659
G.A. Vorob'yev, V.S. Danilovich, L.A. Troyan and P.Ye. Troyan: Effect of Area on the Properties of Activated MIM Systems	149	1663
V.L. Galanskiy and V.I. Zelenskiy: Dynamic Characteristics of MIM Cathodes	151	1665
G.V. Kolesov, I.M. Korzhenevich, V.B. Lebedev, and A.V. Yudin: Coulombic Interaction of Electrons in a Thin Magnetic Lens	154	1668
R.R. Vil'danov, A.T. Mirzayev and A.N. Yakubov: Recording and Reconstruction of Images of Coherently Illuminated Objects by the Heterodyne Intensity Interferometry Method	157	1671
Ye.V. Bausk and P.V. Dolgushev: Selective Removal of Stubs in a Wide-Band SAW Transducers	159	1673
L.N. Loshakov, Yu.N. Pchel'nikov and M.A. Zima: Analysis of the Slow Wave in "Radial Comb" Type System in the Impedance Approximation	161	1854
G.S. Yatskar: Calculation of the Characteristics of H-Plane Waveguide T-Isolators for the Short-Wave Part of the mm Band	163	1856

SOVIET JOURNAL OF COMMUNICATIONS TECHNOLOGY & ELECTRONICS

CONTENTS 1987

Number 1

	English Page	Russian Page
N.Z. Shvarts and V.G. Yelenskiy: Physical Aspects of Microwave Field-Effect Transistors (Review)	1	1681
K.A. Barsukov and E.A. Gevorkyan: Electromagnetic Waves in a Waveguide with a Nonstationary Dielectric Plate	27	1733
A.V. Pomyalov and A.S. Andreyev: Waves of Coupled Oscillations in a Periodic System of Thin-Film Ferrite Resonators	32	1739
V.M. Katikov: Analysis of Search-Tracking Measuring Systems for Multistep Search and Control Procedures	42	1749
V.P. Levshin and A.I. Simonov: Modification of the Polynomial Method of Calculating the Convolution of Signals	49	1757
Bessalov, A.V.: Interference Immunity of a Digital Demodulator of Complex Signals When the Thresholds of Binary Quantizers are Shifted	57	1765
Yu.I. Abramovich and A.I. Nevrev: Methods of Adaptive Adjustment of Compensation Systems under Conditions When the Coordinates of Interference Sources Drift in Angle in Unison	66	1774
A.A. Makovetskiy: The Operating Efficiency of a Laser with Intracavity Pumping Conversion	74	1823
Yu.V. Gulyayev, G.D. Mansfel'd and S.V. Boritko: Acoustoelectronic Interaction in a Semiconductor with Periodically Arranged Contacts in a Varying Electric Field	83	1832
A.Ch. Belyachits, P.D. Kukharchik and V.G. Semenchik: A Holographic System with a Receiver Aperture in the Form of a Circle	90	1839
T.T. Mnatsakanov, I.L. Rostovtsev and N.I. Filatov: Use of a Computer Simulation to Investigate the Influence of Nonlinear Physical Effects on the Current-Voltage Characteristic of Silicon Multilayer Structures	99	1848
N.A. Azarenkov, G.I. Zaginaylov and A.N. Kondratenko: Diffraction and Excitation of Surface Waves Propagating at a Plasma-Metal Boundary	105	1889
V.D. Gusev and V.Ye. Kunitsyn: Reconstruction of the Structure of Volume Inhomogeneities of a Medium	110	1894
A.I. Kon and V.I. Tatarskiy: The Power of a Signal under Conditions of Radioacoustic Sounding of the Atmosphere	118	1903
M.V. Kononov, S.V. Koshevaya and M.Yu. Omel'yanenko: An Electromagnetic Shock Wave in a Rectangular Waveguide with a Nondispersive Cubically Nonlinear Dielectric	123	1909
V.N. Rodionova and G.Ya. Slepyan: The Q Factor of a Cylindrical Cavity with a Coaxial Protrusion	129	1915
BRIEF COMMUNICATIONS		
Kh.L. Garb, R.S. Meyerova, G.V. Pochikayev and P.Sh. Fridberg: Dipole Approximation in the Theory of Diffraction by Small Openings in the Presence of Closely Spaced Parallel Screens	137	1651
Š.Š. Štaras: Effect of Mounting Elements on the Properties of Meander Deflection Systems	139	1653
A.P. Gorbachev, A.N. Romanov and I.A. Romanov: Strip-Line Directional Filters and Multiplexers Coupled to a Resonator Loop	141	1655
V.A. Serikov: Faster Method of Calculating the Two-Dimensional Cross Correlation Function	144	1658
Yu.A. Bryukhanov: Reducing the Duration of Transient Processes in an L-Stage Resonant Amplifier	146	1659
G.A. Vorob'yev, V.S. Danilovich, L.A. Troyan and P.Ye. Troyan: Effect of Area on the Properties of Activated MIM Systems	149	1663
V.L. Galanskiy and V.I. Zelenskiy: Dynamic Characteristics of MIM Cathodes	151	1665
G.V. Kolesov, I.M. Korzhenevich, V.B. Lebedev, and A.V. Yudin: Coulombic Interaction of Electrons in a Thin Magnetic Lens	154	1668
R.R. Vil'danov, A.T. Mirzayev and A.N. Yakubov: Recording and Reconstruction of Images of Coherently Illuminated Objects by the Heterodyne Intensity Interferometry Method	157	1671
Ye.V. Bausk and P.V. Dolgushev: Selective Removal of Stubs in a Wide-Band SAW Transducers	159	1673
L.N. Loshakov, Yu.N. Pchel'nikov and M.A. Zima: Analysis of the Slow Wave in "Radial Comb" Type System in the Impedance Approximation	161	1854
G.S. Yatskar: Calculation of the Characteristics of H-Plane Waveguide T-Isolators for the Short-Wave Part of the mm Band	163	1856

	English Page	Russian Page
O.P. Frolov: An Estimate of the Signal Stability in Radio Links with Passive Reflectors	164	1857
G.S. Safronov and A.G. Chernyavskiy: Evaluation of the Effect of Radio Hologram Quantization on the Energy Characteristics of Images Reconstructed from Them	166	1859
V.Ya. Plekin and M.M. Lednev: The Efficiency of Fast Fourier Transform Algorithms with High Bases	170	1863
V.N. Gutsaki, V.I. Dudkin, V.Yu. Petrun'kin and V.V. Semenov: On the Nonlinear Interaction of Two Radio-Frequency Fields with Optically Oriented Atoms	174	1866
I.A. Man'kin and B.L. Usherovich: The Accuracy of Calculating the Space-Charge Field in Microwave Beam Devices	175	1867
A.N. Vlasov, V.I. Kanavets and V.A. Cherepenin: The Possibility of Increasing the Intensity of the Diffraction Radiation in a Multibeam System	178	1870
M.G. Kurkin and V.A. Cherepenin: Theory of a Relativistic Synchron-Cerenkov Amplifier with a Helical Electron Beam	180	1873
V.A. V'yun, V.V. Pnev and I.B. Yakovkin: Dynamic Characteristics of Acoustoelectronic Convolvers	183	1876
L.A. Frenkel: Effect of a Refractive-Index Gradient on the Characteristics of a Single-Mode Optical Fiber	186	1878
V.A. Gurtov, A.I. Nazarov and V.Ya. Uritskiy: Effect of an External Voltage on the Charged State of MNOS Memory Elements during Irradiation	188	1881

Number 2

L.P. Trukhanova and V.N. Pozhidayev: The Possibility of Forecasting the Attenuation of Millimeter and Optical Waves in Snowfall Along Horizontal Routes	1	1922
V.S. Artemenkov: Sensitivity Analysis of Quasioptimal Complex Receivers and the Processing of Pulsed and CW Signals	9	1939
A.K. Zhuravlev: Angular Coordinate Estimation in the Presence of Spatially Correlated Interference in Adaptive Radar Systems	16	1947
V.M. Koshevoy: Recursive Optimal Processing Algorithms for Interference Correlation Matrices of a Specified Structure	23	1955
V.M. Koshevoy: Estimation of Correlation Matrices	31	1964
V.N. Lagutkin: Calculation of the Statistical Characteristics of Back-Scattered Signals in a Randomly Irregular Ionospheric Waveguide	42	1975
M.I. Mazurkov: Optimization of the Direct Computation of Circular Convolutions of Discrete Signals	49	1983
V.T. Nikolayev and V.N. Talyzin: A Set-Theoretic Approach to the Design of Mobile Radio Communications Networks	54	1989
A.A. Stotskiy, A.B. Berlin, M.N. Kaydanovskiy and V.B. Khaykin: Fluctuations in the Radio Emission of a Cloudless Atmosphere at Centimeter Wavelengths	63	1999
E.A. Shelomov and V.S. Golikov: Autocorrelation Functions of Harmonic Signals in Bases of the Vilenkin-Chrestenson Function	67	2003
A.A. Golovkov and L.N. Shvetsov: The Limiting Frequency Bands of Wideband Amplifiers Using Electron Semiconductor Tubes	72	2008
A.E. Panov and V.Yu. Leushin: Analysis of Circuits with Multimode Multipoles	77	2013
V.P. Ponomarenko: Operating Modes and Pull-In Range of a Phase-Lock System with an Automatic Gain Control (AGC) Circuit	87	2023
S.M. Savchenko: The Frequency Dependence of the Input Impedance of a Diode in a Frequency Multiplier	95	2032
V.P. Abramov, I.P. Mazan'ko and Ye.A. Ulanov: Features of the Radial Distribution of the Gain of a Neon-Helium Plasma at a Wavelength of 0.63 μm in a Transverse Microwave Discharge	101	2038
I.P. Mazan'ko, B.V. Udal'tsov and V.A. Tsar'kov: Effect of the Capacitance of the External Electrical Circuit on the Reactive Oscillations in the Symmetric Discharge of an He-Ne Laser	104	2042
M.Yu. Gusev, A.N. Zyuganov, N.N. Koren' and P.S. Smertenko: Surface-State Generated Currents in Thin Semiconductor Layers	108	2046
A.V. Gostev, V.A. Mashtakova, N.Ya. Rukhlyada and B.B. Shishkin: A Method of Measuring the Emission Current Under Conditions of Zero Electric Field Strength at the Cathode. The Zero-Field Method	114	2052
B.V. Bondarenko, Yu.V. Pisarenko and Ye.P. Sheshin: Fluctuations in the Field-Emission Current of Carbon-Fiber Cathodes	118	2056
Yu.V. Zhulina: Compensation of Phase Distortions in Discrete Apertures when the Object Being Observed is Moving	123	2061
E.S. Kochanov and Ye.F. Zimin: A Combined Sensor of the Electromagnetic Field in a Conducting Medium	133	2071
V.P. Degtyareva, I.A. Dubovoy and V.K. Chevokin: Investigation of the Radial Propagation of Electric Pulses in Biplanar Electron-Optical Converters	141	2079
N.A. Savich, V.Ye. Andreyev, A.S. Vyshlov, A.L. Gavrik, V.P. Konofalov, N.V. Laptev, V.A. Martulev, A.P. Mesterton, A.S. Nabatov, Yu.N. Orlov, I.K. Ostolovskiy, L.N.		

	English Page	Russian Page
Samoznayaev and D.Ya. Shtern: The Daytime Ionosphere of Venus from the 1983 Radio Eclipses of Venera 15 and 16	150	2113
V.V. Klimov and V.L. Prozorovskiy: Scattering of Electromagnetic Waves from Atmospheric Vortices	157	2121
A.M. Lerer: Inhomogeneities in Slotted-Line Waveguides	165	2129
BRIEF COMMUNICATIONS		
V.A. Pruzhanovskiy: The Cutoff Conditions of Hybrid Waves in Rectangular Planar Metal-Optical Waveguides	174	2088
V.A. Kravtsov and O.L. Ulasik: The Effect of a Wedge with a Cylindrical Cap Along the Edge on the Admittance of a Transverse Slot	176	2089
M.S. Belen'kiy, I.P. Lukin and V.L. Mironov: Estimate of the Error Introduced by Atmospheric Turbulence in a Measurement of the Radial Velocity Component of an Object by a Heterodyne Radar	178	2091
A.A. Monakov and R.V. Ostrovityanov: Spectral Characteristics of the Angular Noise in a Direction Finder with a Frequency-Modulated Signal	180	2093
Yu.V. Gulyayev, I.I. Chusov, N.G. Yaremenko, G.V. Nikitchenko and T.V. Bugayeva: The Effect of Ultrasound on the Absorption and Emission Spectra of Light in Semiconductors	182	2095
A.A. Demin and S.O. Noskov: Approximate Reconstruction of Phase Information from Two Intensity Distributions	186	2099
P.T. Zubov, B.Ye. Leshchukov and Yu.L. Khotuntsev: Measurement of the Flicker Noise Parameters of Mixer and Varactor Diodes	190	2104

Number 3

B.S. Azimov and D.B. Trukhov: Parameteric Coupled Solitons in Transmission Lines	1	1709
P.L. Tokarskiy: Mutual Coupling in a System of Radiators with Joule Losses	9	1717
K.R. Simovskiy: An Example of the Combination of an Asymptotic Approach and the Attenuation-Function Method	15	1724
I.D. Mitsenko and V.N. Legkiy: Optimal Filtering in a Multistage Receiver	24	1781
A.Ye. Pushin, M.V. Ratynskiy and O.P. Cheremisin: The Effect of Input Signal Decorrelation on the Effectiveness of Digital Filters in Extracting Signals from Noise	29	1786
V.A. Korado: Optimal Invariant Detection of a Random Signal in Interference with an Unknown Correlation Matrix	34	1791
Yu.K. Rybin: Stochastic Self-Excited Oscillations in Signal Generators with Pulsed Input	43	1801
V.P. Lukin: Dynamic Characteristics of Predictive Adaptive Optical Systems	49	1808
A.N. Dmitriyenko: Nonparametric Signal Detection Using Radomization	54	1813
M.I. Gil' and L.L. Shargorodskaya: Signal Amplitude Estimation in Self-Excited Oscillators	58	1818
Ye.I. Ivlev: The Change in the Power Density of Elliptically Polarized Radiation Incident on the Interface Between Transparent Media	63	2137
V.V. Balinov, Yu.V. Berezin, Yu.E. Vinogradov and V.I. Smirnov: Interference Immunity in Diversity Reception of a Two-Path Signal with Shifted Spectrum	69	2143
A.T. Trofimov: Estimation of the Interfering Parameters for Adaptive Signal Processing Based on the Use of a Poly-Gaussian Model of Interference	76	2151
L.N. Dapilevskiy: Investigation of an Adaptive Antenna Array with Signal Processing at the Outputs of Partially Overlapping Subarrays	84	2160
Yu.P. Akulinichev and V.N. Seitov: Characteristics of the Radar Detection of Targets in a Randomly Inhomogeneous Medium (the Sequential Mechanism of Propagation)	91	2167
Yu.M. Tonkonogov and G.V. Trivozhenko: Investigation of Some Algorithms for Searching for a Moving Signal in a Multichannel System	97	2174
V.V. Khutortsev and V.N. Taran: The Use of Splines to Investigate Algorithms for Nonlinear Filtering	103	2180
V.I. Kislov and V.G. Taranenko: Figures of Merit and the Principles of Optimal Actuator Control in Phase-Conjugate Adaptive Systems	110	2187
N.D. Yegupov, Yu.P. Kornyushin and A.M. Shestopalov: A Walsh Function Algorithm for the Spectral Analysis of Deterministic Signals in Discrete Systems and Circuits	114	2191
R.M. Sedletskiy: Synthesis of Complex Frequency-Modulated Signals by an Improved Stationary-Phase Method	121	2198
M.I. Finkel'shteyn and A.V. Kraynyukov: Estimation of the Delay of Super-Wideband Radio Pulses in a Medium as Applied to Problems of Subsurface Radar	125	2202
V.M. Bogachev and S.V. Dmitriyev: Synthesis of Broadband Matching Circuits Based on the Youla Coefficient Constraints	131	2209

	English Page	Russian Page
Ya.L. Shamfarov: A Traveling-Wave 5-cm Maser for an Astronomical Sum-Difference Radiometer	140	2218
M.V. Davidovich: Solution of the Three-Dimensional Poisson Equation for a Cylindrical Magnetron	145	2224
V.Ye. Polyak and V.A. Filatov: Features of Electron Bunching and Energy Exchange with a Traveling Wave in Optimal O-Type Interaction	153	2233
N.A. Armand, V.A. Andrianov, D.I. Kapilevich, V.I. Ponomarev and V.M. Smirnov: Effect of Tropospheric Refraction on Radio Measurements of the Velocity of Satellites Orbiting the Earth	161	2305
K.V. Koshel': Numerical Solution of the Problem of the Propagation of Short Radio-Waves in a Tropospheric Waveguide	168	2313
Yu.V. Pimenov and Ye.I. Prostakov: Radiation from an Elementary Electric Dipole on a Perfectly Conducting Strip Perpendicular to Its Edge	174	2319
M.V. Zakharyan and V.N. Pozhidayev: Probability of Attenuation of Different Optical Waves in Fogs Along Horizontal Paths	179	2324
A.A. Vorontsov and S.D. Mirovitskaya: Diffraction of a Plane Wave by a Multilayered Dielectric Cylinder	185	2330

Number 4

V.P. Chumachenko: The Design of H-Plane Waveguide Components with a Polygonal Boundary	1	2335
B.Yu. Kapilevich: Numerical Calculation of the Natural Frequencies of a Resonator with a Dielectric Layer Having an Arbitrary Premittivity Profile	8	2343
L.N. Loshakov and N.Ye. Ivanova: Investigation of a Screened Helical Line with a Radially Inhomogeneous Dielectric Medium Inside the Helix	12	2348
A.I. Gudzenko and V.Ye. Sotin: The Natural Modes of Two-Dimensional Rectangular Gratings	22	2357
L.P. Murza: Invariant Detection of Targets Using a Correlation Radiometer	29	2364
S.E. Vorobeychikov and V.V. Konev: S Sequential Procedure for Detecting Disorder in a Diffusion Process	34	2370
A.A. Nadtochiy and N.N. Udalov: Synthesis of a Synchronization System for a Channel with Multibeam Propagation	43	2378
V.P. Ipatov and I.M. Samoylov: Optimum Properties of Ensembles of Binary Sequences	49	2384
Ye.Ye. Zhelezovskiy, O.N. Iofin and A.G. Lazerson: Spectral Characteristics of a Stochastic Process with Frequency Modulation	55	2390
A.S. Dmitriyev and S.O. Starkov: Investigation of the Chaotic Dynamics of a Ring-Type Self-Excited Oscillator with an Asymmetric Characteristic of the Nonlinear Element	60	2396
S.N. Vladimirov and A.S. Maydanovskiy: Comparative Analysis of Natural Fluctuations in Two Classes of Self-Excited Oscillatory Systems	69	2406
L.N. Anisimova and A.P. Koldanova: Uniformity Tests for the Detection of a Sinusoidal Signal	75	2412
L.N. Anisimova, P.V. Gorev and A.P. Koldanov: The Construction of Consistent Estimates	84	2421
A.S. Marekha: Optimum Filtering of Phase-Shift Keyed Signals with Fadings	89	2426
S.M. Zhurav and V.A. Kaloshin: Diffraction of an Electromagnetic Plane Wave by a Perfectly Conducting Semiinfinite Plate	94	1
L.A. Rassvetalov: Generation of Echo Signals in a Nonlinear Resonant Medium	100	8
P.P. Golokoz and Yu.L. Oboznenko: Amplitude Nonreciprocity in Bragg Diffraction of Light by Traveling Acoustic Wave	106	15
V.V. Karavayev and V.S. Molodtsov: Accuracy Characteristics of Super-Resolution Antennas	111	22
D.G. Asatryan and Dzh.Sh. Khachaturyan: The Error in Restoring an Antenna Radiation Pattern from Sampled Readings of the Amplitude-Phase Distribution	115	27
A.G. Vinogradov and Z.I. Feyzulin: Directional Properties of Antennas in a Turbulent Medium Resolving Power	120	33
N.S. Bukhman and A.L. Gutman: Quasioptics of Axially Symmetric Wave Beams in a Plane-Layered Lossless Medium Propagation along the Permittivity Gradient	129	44
V.N. Tutubalin and A.D. Shatrov: An Adiabatic Model for Calculating the Pulse Responses of Multimode Fiber Lightguides	137	54
A.M. Chudnov: Interference Immunity of the Correlation Reception of Pseudorandom Signals Modulated in Amplitude and Phase	143	62
A.L. Il'in and A.Ya. Pasmurov: Statistical Properties of Radar Images of Fluctuating Underlying Surfaces	150	69
B.Zh. Kamaletdinov: Ternary Sequences with Ideal Periodic Autocorrelation Properties	157	77
V.V. Blatov: Optimum Frequency Methods for Signal Detection	162	83

	English Page	Russian Page
A.I. Sokolov and Yu.S. Yurenko: Accuracy Characteristics of the Optimum Filtering of the Coordinates of a Moving Target	167	89
V.P. Afanas'yev: Algorithms for Classifying Signals with Random Parameters	174	97
Yu.I. Abramovich and V.G. Kachur: Effectiveness of Adaptive Tuning of Correcting Filters for Cyclic Convolution	180	105

Number 5

M.V. Yermolayev, V.I. Kanavets, A.V. Terebilov and V.A. Cherepenin: Transients Effects, Modulation and Energy Exchange During the Interaction of Electrons with a Spatially Inhomogeneous Electromagnetic Field	1	2241
K.N. Ul'yanov and A.B. Tskhay: High-Perveance Gas-Filled Spherical Electron-Optical Systems	8	2248
V.N. Gomzin, L.A. Litvinchuk and A.P. Naumov: On the Optimum Choice of the Parameters of a Transmitter-Receiver for a Laser Scanning System	14	2255
A.N. Korostylev, N.S. Repalov, I.S. Savchenko and A.V. Tolpegov: Conversion of the Energy of an Electrostatic Field into a High-Frequency Pulse by Means of a Length of an Artificial Line with Inductively Coupled Cells	20	2261
N.N. Verichev: Investigation of the Dynamics of Systems with Josephson Contacts by the Rapidly Rotating Phase Method	26	2267
V.M. Bogachev and S.V. Dmitriyev: Solution of the Limiting Wideband Matching Problem on the Basis of the Youla Coefficient Restrictions	34	2431
G.V. Melekhin, I.Yu. Moskvicheva, V.A. Stepanov and M.V. Chirkin: Laws Governing the Appearance of Chaos During the Breakup of the Quasiperiodic Regime of Striation Generation in the Positive Column of a Discharge	39	2436
N.L. Romashin and V.A. Solntsev: Magnetic Electron-Wave Interaction of Two Relativistic Electron Beams	44	2442
S.V. Vasil'yev: Hybrid Model of Magnetron	49	2447
A.A. Almazov and N.V. Yegorov: Method of Calculating the Characteristics of Field-Emission Systems	54	2452
V.A. Obukhov and V.B. Ozeretskovskiy: Calculation of the Magnet System of a Rectangular-Cross Section Ion Source with a Peripheral Magnetic Field	62	2459
L.N. Preslenev: Effect of a Mismatch of Light Beams on the Characteristics of Photomixing Acousto-Optic Devices	68	2465
V.B. Voloshinov, Ye.A. Nikanorova and V.N. Parygin: Angular Characteristics of an Acousto-Optic Filter Employing a Paratellurite Crystal	72	2469
Yu.R. Vinetskiy: Frequency Filtering of a Signal by Input Charge-Coupled Device Units	77	2475
T.T. Mnatsakanov: Applicability Limit of the Diffusion Approximation in the Theory of Multilayer Semiconductor Structures	86	127
K.K. Dmitriyev and S.V. Nikonov: Motion of a High-Intensity Electron Beam with an Anisotropic Thermal Velocity Distribution in a Rarefied Gas	91	133
V.N. Belykh and N.N. Verichev: On the Complicated Dynamics of One Autonomous Josephson Contact System	97	140
V.B. Baglikov, V.A. Dianova, Ye.R. Mustel' and V.N. Parygin: Response Speed of Analog-Digital Converters with Electro-Optic Traveling-Wave Modulators	103	148
I.N. Troitskiy, N.D. Ustinov and M.S. Umanskiy: Statistical Properties of Quantum Noise Accompanying Image Reconstruction from Projections	110	155
I.N. Troitskiy, V.A. Tikhomirov and A.G. Shebalin: Analysis of the Effect of the Quantum Structure of an Information-Bearing Signal on the Quality of Images Reconstructed from Projections	117	164
Yu.V. Gulyayev, V.V. Proklov, S.V. Sokolovskiy and V.N. Sotnikov: Acoustooptic Devices for Analog and Digital Data Processing	121	169
Yu.I. Khudak: The Local Structure of a Class of Solutions of a Homogeneous System of Maxwell's Equations	132	225
V.A. Kravtsov: Self-Impedance of a Longitudinal Electric Dipole Located Close to an Elliptic Cylinder	138	232
V.N. Koshparenok, P.N. Melezhik, A.Ye. Poyedinchik and V.P. Shestopalov: The Method of the Riemann-Hilbert Problem in the Spectral Theory of Two-Dimensional Open Resonators. Spectral Characteristics	142	238
V.A. Korobkin, V.V. Osintsev and Ye.V. Obol'yaninova: Two Representations of the Field in the Problem of Natural Electromagnetic Oscillations in Waveguide Extensions	151	248
V.M. Butorin: A Metal Stub with a Capacitive Disk Displaced from the Axis of a Rectangular Waveguide	157	255

	English Page	Russian Page
BRIEF COMMUNICATIONS		
V.I. Ponomarenko, V.N. Berzhanskiy and D.I. Mirovitskiy: Absorption of Electromagnetic Waves by Thin Multilayer Magnetogyrotropic Structures	164	2275
A.P. Gorbachev, A.M. Kupriyanov and S.G. Neverov: Analysis of Nontraditional Omnitransmitting Microwave Four-Terminal Networks Employing Coupled Lines	166	2277
V.A. Lyashchenko: Radiation from a Longitudinal Slot in the Wall of a Multimode Waveguide	169	2280
A.T. Gavrilin: Estimation of the Parameters of a Random Field	172	2283
A.A. Lapides: Spatial Filtering of Distortions of Color Images	174	2285
Yu.I. Abramovich and V.G. Kachur: Effectiveness of Spatial Filtering Systems When There is a Mismatch of Correlation Matrix Models	176	2287
V.V. Shilin: Probability of Zero-Crossings of Random Processes in a Two-Channel System at Different Instants of Time	178	2288
V.V. Medvedev and Yu.K. Fetisov: Influence of the Magnetic Field Orientation on the Region of Magnetic Fields within Which Magnetostatic Waves Exist in Ferrite Films	181	2291
V.A. Kubarev and V.A. Cherepenin: Analytical Method of Investigating the Induced Radiation of a Beam of Relativistic Electron Oscillators	183	2293
Sh.G. Akserov: The Relationship Between the Parameters Characterizing Thermionic Emission	186	2296
V.N. Biryukov and V.Ye. Prozorovskiy: The Current-Voltage Characteristics of Field-Effect Transistors with an Insulated Gate at Low Temperatures	188	2298

Number 6

V.S. Andreyev, A.I. Borodkin, B.M. Bulgakov and I.V. Svet: Synchronization of a Solid-State Microwave Oscillator Which Operates Simultaneously in the Reflection and Transmission Modes	1	112
A.M. Afonin, V.A. Vdovin, V.I. Kanavets, A.D. Poyezd, S.A. Sokolov and V.A. Cherepenin: Transients in a Millimeter Wavelength Surface-Wave Oscillator	6	118
I.M. Braver, Kh.L. Garb, P.Sh. Fridberg and I.M. Yakover: The Phenomenon of Abnormally Low Power Attenuation in a Waveguide with a Semiinfinite Resistive Film	14	264
V.V. Kryzhanovskiy and Yu.B. Sidorenko: Matching a Line Transmitting Nonuniform Waves Using Diffraction Gratings	19	270
Ye.N. Korshunova, A.N. Sivov and A.D. Shatrov: Design of a Resonant Antenna (H-Polarization)	23	275
V.I. Chaykovskiy: Spectral Algorithms for Combined Space and Time Processing of Localized Signals	27	280
V.I. Kislov and V.G. Taranenko: Statistical Model of an Adaptive Two-Mirror Unstable Resonator	32	287
A.A. Bessarabove: Deformation of the Correlation Function of Binary Sequences under Bit Errors or Bit Dropout	39	295
V.G. Gusev and Ye.V. Cherenkova: Analysis of the Response and Choice of Parameters for a Spatial Temporal Filter in an Optimal Detection System for a Multidimensional Stochastic Signal	43	300
A.A. Mal'tsev and A.M. Silayev: Application of Optimal Filtering Theory to the Design of Adaptive Systems Which Minimize the Mean-Square Error	50	309
V.A. Veytsel', M.I. Zhodzishskiy and Yu.I. Zhodzishskiy: Guaranteed Jam-Resistance in Signal Reception	55	316
B.V. Leshchev, S.Ye. London and S.V. Tomashevich: Wideband Transformer Isolation Network for Reciprocal Four-Ports with Cyclic Symmetry	62	361
A.V. Ivanov: Synchronization Accuracy of Phase-Shift-Keyed Signals	66	366
O.V. Ivanitskaya and V.P. Rubanik: Interaction of an Oscillator with a Cavity Resonator in the Presence of Nonlinear Couplings with Delay	71	371
V.D. Il'yushin: The Intensity of the Interaction of a Group of Charged Particles	76	378
A.I. Rogashkova and T.I. Shatalova: Nonlinear Interaction of a Modulated Electron Beam with a Collisional Plasma	85	388
B.V. Bondarenko, V.A. Seliverstov, A.G. Shakhovskoy and Ye.P. Sheshin: Field Emission of a Carbon-Glass Fiber	91	395
A.N. Vystavkin, V.N. Gubankov, S.Yu. Turygin and M.A. Tarasov: Characteristics of Frequency Conversion Using Josephson Junctions in the Case of Strong Coupling with an Electrodynamic System	95	401
M.M. Kechiyev, A.A. Kostenko, O.A. Kuznetsov, O.N. Filatov, G.I. Khlopov and V.P. Shestopalov: Features of the Use of Semiconductor Structures with a Superlattice in the Millimeter Band	102	410
V.M. Kuklin: On the Influence of Dissipative Processes on the Space-Time Dynamics of Instability in a Plasma	185	452

	English Page	Russian Page
V.N. Kurdyumov and V.N. Starkova: On the Theory of a Microwave Diode with a Field-Emission Cathode	188	455
V.N. Gutsaki, V.E. Dindarov, V.Yu. Petrun'kin and V.V. Semenov: Method of Observing "Magneto-Independent" Transitions in Optically Oriented Alkali Metal Vapors	191	458

Number 7

G.A. Vugal'ter and I.A. Gilinskiy: Excitation and Reception of Surface Magnetostatic Waves with a Section of Microstrip Line	1	465
F.G. Bogdanov, G.Sh. Kevanishvili and M.N. Chikhladze: Scattering of a Plane Electromagnetic Wave by a Multielement Periodic Array of Dielectric Cylinders	8	473
V.S. Cherenkov: A Representative of the Solution of Helmholtz's Equation and Its Application to Diffraction Problems	15	481
B.A. Amosov: An Algorithm for the Approximate Solution of Integral Equations in the Theory of Diffraction	22	490
A.N. Mansurov: Interference of Waves with Different Frequencies	29	498
V.V. Fisanov: Boundaries of the Anomalous Singularity in the Field at an Edge in Gyrotropic Media	33	502
A.A. Yashin: An Experimental-Analytical Method of Calculating the Schwarz-Christoffel Integral Constants in Problems of Modeling Integrated Microwave Structures	39	509
V.A. Korobkin and N.I. Pyatak: Natural Electromagnetic Resonances of Semiopen Waveguide Structures	46	517
V.A. Korobkin and Yu.G. Makeyev: Natural Electromagnetic Oscillations at the Junction of Circular and Radial Waveguides	53	526
Yu.K. Sirenko, V.P. Shestopalov and N.P. Yashina: Free Oscillations in a Coaxial-Waveguide Resonator	60	535
S.Yu. Kovenskiy and A.V. Tikhonravov: Synthesis of Smooth Directional Couplers with Specified Amplitude and Phase Properties	68	545
V.M. Mel'nikov: A Difference Algorithm for Determining the Dispersion of the Radio-Echo from a Multiple Target	74	553
D.M. Vavriv and N.I. Gavrilova: Natural Fluctuations in Resonant Devices with Distributed Interaction in the Nonautonomous Operating Regime	80	828
A.N. Didenio, A.G. Zherlitsyn, S.I. Kuznetsov, G.V. Mel'nikov, N.M. Filipenko and G.P. Fomenko: Investigation of the Bunching Mechanism in a Microwave Triode with a Virtual Cathode	88	837
A.P. Privezentsev, N.I. Sablin and G.P. Fomenko: Oscillations of Virtual Cathode in a Triode System	91	841
V.V. Bortnikov and A.V. Romanov: Interference Immunity of Algorithms for the Quasicoherent Spaced Reception of Discrete Messages with Self-Learning in Terms of Signals and Lumped Interferences	96	986
A.V. Titov: Comparative Evaluation of Some Methods for Making Digital Filters	104	995
Yu.K. Rybin and B.L. Groshev: Design of Generators of Sinusoidal Oscillations with Transient Processes That are Optimum in Terms of Duration	109	1001
A.A. Dvornikov, V.A. Prokof'yev and G.M. Utkin: On the Spectrum of Pulsed Oscillations of Intercoupled Self-Excited Oscillators	115	1008
N.D. Biryuk, Yu.I. Kitayev and Yu.V. Trubnikov: Qualitative Analysis of the Stability Condition of High-Frequency Radio Circuits Employing Bipolar Transistors	119	1012
T.I. Arsen'yan and G.I. Zandanova: Fluctuations of Optical Beams of Different Diameter in the Surface Air Layer	125	874
V.F. Vzyatyshev and G.P. Rayevskiy: Interaction Effects of Azimuthal Oscillations in Dielectric Disk Resonators	127	877
V.V. Meriakri, V.A. Murmuzhev and A.N. Sivov: Dispersion Properties of a Planar Dielectric Waveguide with an Impedance Substrate	129	879
A.N. Mansurov and G.A. Shadrin: Use of Parabolic Equation for Solving the Problem of Image Reconstruction by the Heterodyne Holography Method	131	881
Yu.A. Kravtsov: Refined Heuristic Criteria for the Applicability of Geometrical Optics	133	883
D.D. Klovskiy and A.Yu. Sherman: Directivity Characteristics of Antennas for Optimum Discrimination of Space-Time Signals	135	885
S.N. Gavrilin and S.A. Nikitov: Conversion of Waveguide Modes by Means of a Periodic Magnetic Domain Structure	137	888
A.A. Kuriksha: On One Method of Broadening the Class of Phase-Shift Keying Signals with Excellent Correlation Properties	139	890
B.A. Kononov, Yu.I. Sapozhkov, L.F. Smekalin and N.I. Yagushkin: Effect of Electric Field on the Reflection of Electrons from an Insulator Target	141	892
A.P. Balashova and A.E. Shabel'nikova: On the Unique Features of the Spectral Characteristic of the Photoemission from Thin Silver Films Treated with Cesium and Oxygen	144	895

	English Page	Russian Page
G.V. Kolesov, I.M. Korzhenevich, M.Ye. Kurganskaya and V.B. Lebedev: Fringe Fields of a Condenser with Nonparallel Plates	147	898
M.T. Burova and G.N. Shkerdin: Effect of Sound Modulation on the Acoustic Distributed Feedback	150	902
A.I. Boltonosov and V.G. Sologub: On the Scattering of a Plane Wave by a System of Strips, Arranged Pairwise in Parallel Planes	154	1101
E.A. Al'khovskiy, V.I. Asaf'yev, A.S. Il'inskiy and N.K. Tsibizov: Investigation of the Dependence of the Damping in Low-Loss Circular Corrugated Waveguides on the Parameters of the Corrugation	156	1103
G.T. Kazakov and Yu.A. Filimonov: Surface Magnetostatic Waves in Finite-Width Ferrite-Semiconductor Structures	158	1105
V.A. Doroshenko and V.G. Sologub: On the Structure of the Field of a Radial Magnetic Dipole, Scattered by a Slotted Conical Surface	161	1110
Yu.I. Glotov, G.A. Denzanov, A.F. Sergiyenko, G.I. Khlopov and V.P. Shestopalov: Millimeter-Band Protectively Coated Flexible Cylinderical Slot Line	163	1112
V.V. Kozlovskiy: Dispersion Equations of Inhomogeneous Dielectric Waveguides	166	1108
L.I. Gromova and Ye.P. Kurushin: Variational Approach to a Calculation of the Dispersion of Magnetostatic Waves in Inhomogeneous Ferrimagnetic Materials	168	1115
S.P. Skobelev: Radiation from an Array of Planar Waveguides with Slotted Coupling Elements	170	1117
V.G. Pavel'yev and Sh.Ye. Tsimring: On the Method of Planar Cross Sections in the Theory of Highly Irregular Oversize Electromagnetic Waveguides	173	1121
D.D. Sadov: Grouping of Independent Random Signal Detection Channels for a Non-ideal Noise Sample	176	1124
G.A. Vorob'yev, S.A. Gnygazov and R.B. Lubsanov: Influence of the Collector Electric Field on Processes Occurring in a Formed Metal-Insulator-Metal System	179	1127
D.A. Usanov and V.Ye. Orlov: Nonmonotonic Dependence of Electromagnetic Wave Damping on the Injection Level in p-i-n Diode Structures Placed in a Waveguide	181	1129

Number 8

V.S. Charnyak: Effectiveness of Multiposition Detectors of Fluctuating Signals Buried in Spatially Correlated Interference	1	559
N.N. Vorsin, V.G. Mirovskiy, L.A. Smirnova, A.A. Tikhomirov, A.Sh. Shamba and V.S. Etkin: Investigation of a Radiometer-Scatterometer with a Degenerate Parametric Amplifier	14	574
P.T. Zubov and Yu.L. Khotuntsev: Comparison of the Performance Characteristics of Doppler Short-Range Systems	20	582
M.B. Bondarenko, V.I. Tkachenko and Vl.I. Tkachenko: Nonlinear Interaction between an Electron-Ion Beam and a Dissipative Plasma	25	596
I.A. Anisimov and I.Yu. Kotlyarov: Emission of Electromagnetic Waves from an Axially Symmetric Modulated Electron Beam in a Nonuniform Plasma	29	601
A.N. Vlasov, V.I. Kanavets and V.A. Cherepenin: A Geometrical Optics Method for Analyzing Coherent Diffraction Radiation from Relativistic Electron Beams	33	606
V.N. Dubrovskiy, A.S. Karasev and O.A. Kireyev: Experimental Study of Junctions with a Low n-GaAs Barrier	38	612
A.N. Zyuganov, N.N. Koren' and P.S. Smertenko: Characteristics of Double Injection in Wide-Gap Semiconductors	42	617
S.N. Antonov, Yu.V. Gulyayev, V.M. Kotov and P.V. Poruchikov: Acoustooptical Switching of Optical Channels	47	623
N.A. Armand, V.A. Andrianov and V.M. Smirnov: Reconstruction of the Refractive Index Profile of the Troposphere from Measurements of the Frequency of Satellite Signals	52	673
Ye.A. Konyashenko and V.N. Shmykov: Spectral Representation of the Electromagnetic Field of an Arbitrary Current Distribution	58	681
S.N. Vorob'yev: Scattering of Electromagnetic Waves by a Nonequidistant Array of a Finite Number of Inclined Strips	63	687
V.N. Mikhaylov and V.M. Musin: Effect of Nonuniformity of the Sound Intensity Distribution on the Efficiency of Acoustooptical Interaction	70	696
G.Ye. Zil'berman, L.F. Kupchenko and G.F. Goltvyanskaya: Diffraction of Light by Ultrasound for Collinear Propagation	76	703
P.Ye. Zil'berman, G.T. Kazakov and V.V. Tikhonov: Magnetostatic and Fast Magnetoelastic Waves in Yttrium-Iron Garnet Films with an Irregular Domain Structure	82	710
A.V. Vashkovskiy and D.G. Shakhnazaryan: Reflection of a Surface Magnetostatic Wave from a Film Edge	89	719
V.I. Balakshiy, A.G. Kukushkin and M.Yu. Torgovkin: Recording of the Phase Structure of a Light Field Using the Selective Properties of Anisotropic Bragg Diffraction	93	724

	English Page	Russian Page
V.A. Melititskiy and A.I. Mosionzhik: A Probabilistic Model of Non-Gaussian, Periodically Nonstationary Radio Signals	100	747
Yu.G. Bulychev and V.N. Taran: An Invariant Group Method for Identifying Target Positions in Triangulating, Multiposition Passive Radar Systems	107	755
V.A. Averochkin, P.Ye. Veranov and V.S. Tokolov: A Recursive Filter Which Maximizes the Output Signal-to-Noise Ratio	115	766
G.B. Gukov: Distribution of the Values of a Recursive Pulsed Process	119	770
V.G. Leonov, L.Ya. Mogilevskaya, Yu.L. Khotuntsev and A.V. Frolov: Correlation Relations between the Complex Amplitudes of the Noise Components in Bipolar and Field-Effect Transistors in the Presence of Strong Signals	126	779
E.V. Kal'yanov: Synchronous and Stochastic Self-Excited Oscillations in a Transistor Microwave Oscillator with Delayed Feedback, Subjected to the Parametric Action of an External Force	131	784
O.P. Novozhilov: Identification of Nonlinear Elements on the Basis of a Single Harmonic of the Response	137	792
Yu.V. Gulyayev, A.G. Kozorezov and G.D. Mansfel'd: Characteristic Modes of Oscillation in a Piezoelectric Semiconductor in an Alternating Electric Field	142	808
BRIEF COMMUNICATIONS		
G.Ye. Zil'berman, L.F. Kupchenko and G.F. Goltvyanskaya: Nonreciprocal Acousto-optical Effect Taking into Account the Diffraction Spreading of Light and Sound	152	629
M.L. Levin: Maxwell's Equations and the Transformer	155	632
V.G. Radziyevskiy and L.Sh. Myazitova: Polarization Processing of Signals in Multichannel Transmitting-and-Receiving Systems	157	634
B.D. Zamarayev and I.M. Fuks: Frequency and Angle-of-Incidence Dependence of the Average Scattering Coefficient of Some Surfaces	160	638
A.P. Rodimov, Ye.I. Glushankov and S.V. Kobin: Adaptive Spatial-Temporal Processing of Radio Signals in Antenna Systems with a Synthesized Aperture	162	640
Z.D. Lerner: The Width of the Spectrum of a Radio Pulse	164	642
A.V. Krivtsov: A Dynamic Conversion Operator Arising in a Polytron	166	644
L.G. Bezayeva, L.N. Kaptsov and P.S. Landa: Investigation of Random Modulation of the Oscillations of a Generator with an Inertial Nonlinearity Under Parametric External Action	169	647
F.V. Lisovskiy, Ye.S. Chizhik and V.I. Shcheglov: Magnetooptical Study of Amplitude-Frequency and Phase-Frequency Characteristics of the Oscillations of a Flat Domain Wall in Ferrite-Garnet Films	172	650
B.S. Dmitriyev, M.A. Dmitriyev and Yu.D. Zharkov: Measurement of the Plasma Frequency of Electron Beams Drifting in a Magnetic Field	175	653
V.A. Vanke, S.K. Lesota and A.V. Rachnikov: The Problem of Synthesizing the Energy-Transmission Channel of a Space-Based Solar Electric Power Station	177	655
N.A. Armand, V.I. Grigor'yevskiy and A.N. Lomakin: The Possibility of Synchronizing Separate Points Using an Optical Communications Channel	179	658
V.N. Yevdokimov and A.V. Shimanskaya: Modeling of Electron Gain in a Multiplier Channel Using the Monte-Carlo Method and Generating Functions	181	660

Number 9

R.Sh. Aleyner and B.I. Yanover: Synthesis of Algorithms for the Space-Time Processing of Signals in the Frequency Domain by Using the Discrete Fourier Transformation	1	324
V.S. Chernyak: Space Diversity Detectors of Fluctuating Signals in the Presence of Spatially Correlated Interference	10	334
K.V. Penzin: Synthesis of Multiple-Scale Measuring Systems	20	347
S.Ye. Fedorov and A.N. Mart'yanov: Potential Noise Immunity of a Quantum Channel with a Noncoherent Source of Radiation	28	356
V.A. Zhurakhovskiy: Automatically Phase-Stabilized Gyroresonance Electron-Beam Retarder (a Gyroretarder) Relativistic Nonlinear Theory	33	820
L.Yu. Dzagurov and Yu.A. Kovalenko: Numerical Modeling of Gas-Filled Electrooptical Systems	40	847
M.B. Golant, Yu.V. Gulyayev, V.N. Yefimov, Yu.F. Zakharchenko and N.I. Sinitsyn: Conditions for the Appearance of Multifrequency Generation in a Distributed Resonant Self-Excited Backward-Wave System	46	855
Yu.V. Gulyayev, Ye.G. Isadzhanyan and G.N. Shkerdin: Bistable Properties of a Nonlinear Fabry-Perot Resonator with Acoustooptical Interaction	57	868
V.I. Aksenov and A.V. Moshkov: The Field Strength on the Earth's Surface from a Very Low-Frequency Source in the Ionosphere	62	913

	English Page	Russian Page
S.M. Yeremin: Green's Function for Maxwell's Equations in an Anisotropic Plasma	69	922
S.T. Grinchenko and N.D. Tarankova: Investigation of the Quality of Optimal Reception for a Source and Channel with Memory	76	931
A.M. Vagapov and L.G. Kravets: Non-Optimal Detection Losses in Digital Radiometers	83	939
G.B. Gurov, Yu.G. Ryndin and N.N. Sukovatkin: Detection of a Point Target by a Spaced System Using Signal Reradiation	88	945
A.N. Luk'yanov: Design and Analysis of an Asymptotically Optimal Quantizer for Uncorrelated Signal Samples	95	954
I.Ya. Kremer and V.I. Kostylev: Detection of an Extended, Randomly Emitting Source with Unknown Energy Brightness Distribution	102	962
I.P. Knyshev: Optimization of an Analog-to-Digital Converter Based on the Parameters of a One-Dimensional Distribution	110	971
R.M. Sedletskiy: Compensation of the Fresnel Spectral Ripples	117	980
A.A. Dzhurakhalov, E.S. Parilis, N.Yu. Turayev and F.F. Umarov: Computer Simulation of Glancing Scattering of Ions by the Surface of a Single Crystal	122	1019
G.F. Goltvyanskaya: Diffraction of Light by Longitudinal Ultrasound in Uniaxial Crysgtals	127	1026
N.S. Ginzburg, N.A. Zavol'skiy and G.S. Nusinovich: Dynamics of Gyrotrons with a Variable Longitudinal Structure of the Microwave Field	132	1031
Yu.V. Andriyanov, V.N. Bazdyrev, D.A. Borisov and V.M. Zhukov: Charged-Particle Beam Generation in a Vacuum Microwave Discharge Initiated by Explosive Emission	139	1040
V.A. Syrovoy and L.P. Shanturin: Synthesis of Extended Relativistic Beams Using Antiparaxial Expansions	145	1048
Yu.V. Grigor'yev: Formation of a Wide Electron Beam in a System with Plane Electrodes and a Cylindrical Cathode	158	1064
S.N. Bun'kov, B.A. Vtorushin, V.N. Yegorov, V.I. Konstantinov, V.L. Masalov and P.V. Smirnov: Cooled Dielectric Resonators for Frequency Stabilization	165	1071
V.A. Rudskiy and V.V. Togatov: Analysis of Current Delay in a High-Voltage Transistor Under Forced-Shutdown Conditions	173	1081

Number 10

N.V. Matveyev: Characteristics of High-Current Electron-Beam Tubes in the Electron-Beam Retardation State	1	1092
Ya.N. Fel'd: Current Synthesis on Closed Surfaces in Terms of a Given Directivity Pattern	8	1137
A.F. Bazovoy: Synthesis of Discrete Wide-Band Antennas with Optimum Mean Directivity Patterns	14	1144
M.Ya. Mints and Ye.D. Prilepskiy: Linear Antenna Arrays with Maximum Directive Antenna Gain for Current-Amplitude Limitation	20	1152
S.M. Zhurav: On Ohmic Losses in an Infinite Impedance Grating	24	1157
G.M. Aristarkhov and V.P. Chernyshev: Indirect Synthesis of Microstrip Filters Employing Codirectional Comb Resonators with Attenuation Poles at Finite Frequencies	34	1168
A.V. Vashkovskiy, K.V. Grechushkin, A.V. Stal'makhov and V.A. Tyulyukin: Focusing of Volume Magnetostatic Waves	41	1176
A.A. Kirilenko, L.A. Rud' and V.I. Tkachenko: Excitation of an Oversize Rectangular Waveguide by an E-Plane Truncated Bend	47	1184
S.T. Grinchenko and N.D. Tarankova: Analysis of the Characteristics of the Element-by-Element Reception of Binary Signals	53	1191
V.A. Yermolayev: Variational Synthesis of the Input Signals of Nonlinear Filters from their Response at a Fixed Instant of Time	60	1199
G.I. Komar and V.P. Shestopalov: Cylindrical and Mirror Slotted Lines (Review)	66	1345
V.P. Yakubov and N.A. Simakova: The Inverse Problem of Refraction in the Earth's Atmosphere	85	1367
A.G. Pavel'yev: Application of Kotel'nikov's Theorem for Determining the Conditions of Regularization of the Inverse Problem of Refraction	91	1374
Yu.G. Ryndin and A.M. Chikin: Construction of the Radio Image of an Object by the Maximum Probability Method	102	1386
A.S. Sysoyev: Structure of the Field of Decaying Harmonics in the Diffraction of Wave Beams by One-Dimensionally Periodic Gratings	106	1391
B.A. Panchenko, S.T. Knyazev and F.Kh. Sabirzyanov: Radiation Characteristics of Strip Antennas and Antenna Arrays Built on a Dielectric Substrate with an Air Gap	111	1397
Yu.I. Abramovich, V.G. Kachur and V.N. Mikhaylyukov: Rate of Convergence of Adaptive Procedures for Separate Tuning of Interference Compensation Systems	117	1438
Yu.I. Abramovich and V.G. Kachur: Methods of Alternate Adaptive Tuning of Sepa-		

	English Page	Russian Page
rate Interference Compensation Systems	124	1446
M.M. Fishman: Upper Limit for the Average Duration of a Multiple-Alternative Sequential Procedure	131	1453
A.Ye. Zhesterev and A.V. Titov: Characteristics of Two Types of Digital Filters of Linearly Varying Signals	139	1461
A.K. Kapylov: On the Structure of *a posteriori* Probability Distributions in Problems Dealing with the Simultaneous Filtering of Markovian Processes	143	1466
V.N. Zhigulev and S.S. Sapegin: Solution of Frame Reconstruction Problem	149	1472
V.V. Losev: Decoding of Sequences of Bent Functions by Means of a Fast Hadamard Transform	155	1479
S.S. Novikov and A.S. Maydanovskiy: System of 2nd Self-Excited Oscillators with Two Types of Resistive Coupling	158	1483
A.S. Bal'sevich, V.I. Gvozdev and Ye.I. Nefedov: Power Dividers in Microwave Volume Integrated Circuits	163	1505
M.A. Grigor'yev, V.V. Kolosov and Yu.N. Navrotskaya: Experimental Determination of the Dependence of the Admittance of a Gunn Diode on the Amplitude of the A-C Voltage and the Frequency	169	1512
V.K. Kornev, K.K. Likharev and Ye.S. Soldatov: Mutual Synchronization of Josephson Tunnel Junctions	178	1521

Number 11

V.S. Anishchenko and M.A. Safonova: Mechanisms for Breakdown of the Invariant Curve in Model Mapping of a Plane	1	1207
A.M. Krot and Ye.B. Minervina: Synthesis of Digital Fourier Transformation Algorithms for Real Sequences on the Basis of Polynomial Algebra	9	1217
V.B. Kitayev and A.A. Mal'tsev: Stationary Characteristics of an Adaptive Storage Comb Filter, Minimizing the Mean-Square Error	19	1230
A.A. Mal'tsev and A.M. Silayev: Optimal Detection of Signals with Random Discontinuous Parameter Changes	28	1241
Yu.G. Bulychev, V.N. Taran and V.V. Khutortsev: Stochastic Semigroups of Operators for Space-Time Filtering	36	1251
V.P. Ipatov, V.I. Korniyevskiy and V.D. Platonov: Minimum-Power Jamming of Discrete Periodic Signals	40	1256
O.V. Korobko and B.I. Tauroginskiy: Analysis of the Spatial Spectrum of the Field of Coherent Radiation Sources from the Algebraic Properties of the Correlation Matrix of the Signals of an Antenna Array	47	1403
V.A. Kravtsov and O.L. Ulasik: Radiation from Slots on a Solid Formed by the Intersection of an Elliptical Cylinder and Strips of Hyperbolic Form	52	1408
T.G. Beleycheva: Computed Characteristics of the Modes of an Optical Anisotropic Diffusion Waveguide	57	1413
A.M. Lerer: The Singularities at the Edge of an Elliptical Disk in the Solution of Some Boundary-Value Problems in Microwave Electrodynamics	61	1418
B.Yu. Kapilevich and Ye.R. Trubekhin: Analysis of Two-Mode Waveguide-Dielectric Filters with Transcritical Couplings	68	1425
Yu.N. Pchel'nikov: Comparative Evaluation of the Attenuation in Microwave Elements Based on a Spiral Slow-Wave System	74	1432
S.P. Bugayev, V.I. Kanavets, A.I. Klimov, V.I. Koshelev, A.I. Slepkov and V.A. Cherepenin: Interaction of an Electron Beam and an Electromagnetic Field in a Multiwave 10^{10} W Cherenkov Generator	79	1488
V.A. Gurtov, A.I. Nazarov and V.Ye. Stepanov: The Space Charge in Metal—Silicon-Nitride—Oxide—Semiconductor Elements Exposed to Ionizing Radiation	87	1499
L.Yu. Dzagurov and Yu.A. Kovalenko: Numerical Modeling of a Planar Gas-Filled Diode	92	1528
S.Ya. Belomyttsev and G.A. Mesyats: The Structure of Electron Beams in High-Current Diodes (A Review)	96	1569
A.I. Lomtev and L.G. Bol'shinskiy: A New Class of Nonlinear Surface Waves on a Periodic Structure	107	1584
A.N. Teokharov: Diffraction of Electromagnetic Waves by a Very Rough Interface	116	1594
V.V. Kabanov: Model of Amplitude Probability Distributions of Atmospheric Radio Noise	122	1603
Ye.R. Milyutin and A.A. Taklaya: Probability Density Distribution Law of the Received Power Fluctuation in the Presence of Wandering of an Optical Beam in a Turbulent Atmosphere	129	1611
A.I. Perov: Adaptation of Linear Filtering Systems	136	1617

	English Page	Russian Page
BRIEF COMMUNICATIONS		
B.Z. Katsenelenbaum: An Open High-Q Resonator Made by Cutting Slots in a Closed Resonator	144	1298
A.I. Adonina: Natural Waves of a Planar Waveguide with a Grating on a Three-Layer Magnetodielectric	147	1302
E.A. Al'khovskiy, A.S. Il'inskiy and N.K. Tsibizov: Losses in Circular Corrugated Waveguides for the Millimeter Wave Band	150	1304
K.V. Koshel': Numerical Solution of the Tropospherical Propagation Problem for Ultrashort Radio Waves. An Elevated Receiver	151	1305
A.B. Goroshchenya: Estimate of the Frequency Rotation of the Directivity Pattern of Plane and Conical Helical Antennas	153	1308
V.N. Mikhaylov and V.M. Musin: Nonstationary Diffraction of High-Intensity Light by Sound	155	1309
G.V. Kalin and I.O. Kirichenko: On Controlling the Configurations of the Visibility Zone of a Search Radar	157	1311
L.G. Dorosinskiy: Detection of Signals at a Synthetic-Aperture Radar Against a Background of Interfering Reflections	159	1314
M.S. Kvasnitsa and V.I. Solodushkin: Effect of Equipment "Dead" Time on the Error in Measuring the Intensity of a Pulse Sequence	163	1317
N.P. Kravchenko, N.L. Romashin and V.A. Solntsev: Investigation of the Self-Excitation Conditions of Electron-Wave Systems as the Electrons Interact with Two Synchronous Waves	166	1320
B.Ya. Yankilevich: Investigation of the Operation of a Metal - Insulator - Metal Cathode in the Pulse-Code Regime	169	1324
V.S. Komkov: Effect of Physical Conditions at the Surface of a Plasma on the Calculated Parameters of Ion-Optical Systems	171	1326
V.I. Anisimkin and I.M. Kotelyanskiy: Influence of the Unique Features of the Propagation of Surface Acoustic Waves (SAW) in Layered Structures on the Operating Characteristics of SAW Devices	173	1329
A.B. Kostin: Optimization of Fast-Response Vacuum Photocells	177	1332

Number 12

O.V. Bazarskiy and Yu.V. Korzhik: On the Optimum Extent of Noisy Sources, Resolvable by a Spatial Aperture	1	1626
G.S. Sinyakov, N.F. Daneyko and Ye.P. Kuznetsov: Effect of Amplitude Quantization on the Noise Immunity of a Relay Correlator	6	1631
V.V. Gorshkov: Digital Filtering of Continuous Signal Parameters	12	1637
Yu.P. Akulinichev and A.M. Golikov: Analysis of Correlation Characteristics of Randomly Inhomogeneous Channels in the Presence of Combined Separation of Sources and Receivers	20	1646
V.S. Yefimenko and V.N. Kharisov: Optimum Filtering in Problems of Space-Time Processing and Its Characteristics	27	1654
P.S. Krylov, A.V. Mironov and V.Ye. Privalov: On the Limiting Reproducibility of the Frequency of He-Ne $^{127}I_2$ Laser Radiation	35	1663
F.V. Bunkin, V.I. Derzhiyev, N.N. Koval', G.A. Mesyats, V.S. Skakun, V.F. Tarasenko, P.M. Shchanin and S.I. Yakovlenko: Investigation of Quasistationary Generation in a Penning Plasma Laser at λ = 585.3 nm	43	1672
V.Ye. Privalov and S.I. Shishov: Investigation of the Decreasing Portion of the Volt-Ampere Characteristic of Gas-Discharge Lasers	48	1678
A.A. Kurayev and A.K. Sinitsyn: Nonlinear Interaction of a Relativistic Electron Beam with the Rotating E_{11n} Field of a Cylindrical Resonator	55	1686
V.A. Gurtov, O.N. Ivashenkov and P.A. Raykerus: Kinetics of Charge Buildup in Memory Elements in the Presence of Electron Injection from Silicon	61	1693
N.N. Chadayev and G.N. Shuppe: Emission of Nonequilibrium Excited Electrons from a Metal	66	1699
B.A. Snedkov and A.B. Snedkov: Motion of Electron Beam in a High-Frequency Gradient Field	72	1707
A.P. Privezentsev: Analytical Solution of the Equations of the Plane Sheet Model for a Beam of Charged Particles	77	1712
V.B. Ozeretskovskiy: Analysis of the Vacuum Regime of Ion Beam Braking in an E × B Layer	82	1719
L.A. Bokov and V.A. Krakovskiy: Acousto-Optic Interferometer with Surface Excitation of Sound	88	1726

	English Page	Russian Page
A.S. Zadorin and S.N. Sharangovich: Strong Acousto-Optic Interaction of Modulated Light Beams in the Field of an Ultrasonic Pulse with a Complicated Frequency Spectrum	93	1732
V.A. Datskovskiy and S.P. Kudryavtseva: Analysis of the Thermal Regime of the Collector of an Electron Vacuum Tube under Conditions of an Azimuthally Non-uniform Current Collection	103	1743
BRIEF COMMUNICATIONS		
V.N. Pozhidayev: Estimate of the Attenuation Probability of Millimeter Waves in Convective Clouds	109	1533
Yu.N. Novikov: Characteristics of Ring-Current Emission in a Medium with a Dielectric Layer	112	1537
M.M. Martynyak and P.A. Savenko: Numerical Solution of the Problem of Synthesizing a Spherical Antenna Array	115	1539
D.S. Dobryak: On the Relationship between the Spectral Density and Intensity of a Stream of Atmospheric Radio Interference Outbursts	117	1542
L.Ye. Kopilovich: On Signals with a Minimum Indeterminacy Function for Simultaneous Determination of the Range and Velocity of an Object	120	1545
Yu.I. Abramovich and V.G. Kachur: Effect of Failures of Antenna Elements on the Effectiveness of "Toeplitz" Tuning Methods	123	1547
I.I. Shevchenko, V.V. Shtykov and V.S. Bondarenko: On Relaxation Processes in Ferrites Exhibiting the Nuclear Magnetic Resonance Effect	125	1550
F.G. Bass and G.M. Pritula: Electromagnetic Waves in Randomly Inhomogeneous Media in the Presence of Charged Particle Beams	128	1554
A.V. Medved', I.P. Nikitin and L.M. Filimonova: Effect of Crystallographic Anisotropy on the Spectrum of Magnetostatic Waves in Yttrium Iron Garnet Films	131	1557
B.M. Gugel', A.Ye.Melamid and V.P. Plyuta: Long-Term Keeping Quality of p-GaAs:Cs, O Photocathodes with a Negative Electron Affinity	133	1559
V.N. Prokushkin and Yu.P. Sharayevskiy: Surface Magnetostatic Waves in a Ferrite Structure with Impedance Boundaries	136	1750
V.I. Naydenko and Ye.V. Guseva: Calculation of Wave Power in a Periodic Electrodynamic Structure	138	1753
F.G. Bogdanov, R.G. Kevanishvili, G.V. Kekeliya and E.V. Medzmariashvili: Diffraction of a Plane Wave by a System Comprising a Dielectric Layer and a Grating	143	1757
V.V. Konin: Synthesis of Ladder-Type Microwave Divider with a Given Power Distribution Among the Channels	146	1760
Yu.I. Abramovich and V.G. Kachur: Optimum Conditional Estimation of the Correlation Moments in Problems Dealing with the Adaptive Tuning of an Interference Compensation System	148	1762
N.V. Vereshchagina: Autocorrelation Function of Signals with Relative Phase Manipulation of the Carrier by a Binary Markovian Sequence of Symbols	150	1765
V.M. Smol'yaninov: Lower Limit of the Maximum Modulus of the Cross-Correlation Coefficients of Discrete Multiplicative Group Signals	153	1768
A.M. Vagapov, L.G. Kravets and V.A. Koval': Optimum Bayesian Projection-Energy Receivers for the Detection in White Noise of a Quasideterministic Signal with a Uniform Direction Probability Density in Hilbert Space	156	1771
M.V. Fiskina and A.B. Shvartsburg: Anisotropic Low-Frequency Waveguide in the Upper Ionosphere	158	1774
P.B. Rabkin: Transient Process and Turn-Off Time of p-n-p-n Structures with Charge Removal by the Reverse Current	161	1776
G.V. Kolesov, I.M. Korzhenevich, M.Ye. Kurganskaya and V.B. Lebedev: Influence of Relativistic Effects in a Traveling-Wave Deflection System on the Resolution of an Electron-Optical Converter in the Dynamic Regime	164	1779
N.S. Aramyan: Investigation of the Signal of a Photodiode in an Oscillatory Circuit	167	1783